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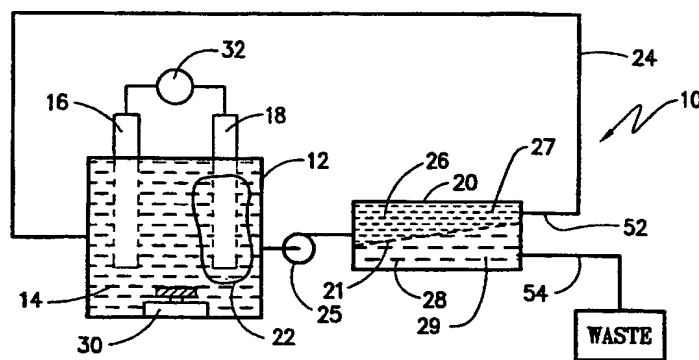
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(54) Title: ELECTROWINNING CELL INCORPORATING METAL ION FILTRATION APPARATUS



(57) Abstract: An apparatus and method for electrowinning metal from ionic solutions is provided wherein ionic solution is subject to nanofiltration. An electrowinning cell (10) includes a reservoir (12) adapted to receive an ionic solution (14). During operation, metal ions in solution (14) electroplate onto cathode (18). Nanofilter (20) is in fluid communication with the reservoir and receives solution (14) from a location (22) proximate to the cathode (18). Retentate (52) is formed as a first portion (26) of the solution (14) which passes through the membrane (21) of the filter (20). Permeate (54) is formed as a second portion (28) of the solution (14) which passes through the membrane (21) of the filter (20) to a second region (29) on the opposite side of membrane (21) from the first region (27). Permeate (54) has a second concentration of metal ions lower than the first concentration in first portion (26). Retentate (52) is returned to the reservoir (12) to intermix with solution (14).